

Amendment Under 37 C.F.R. §1.111  
U.S. Patent Appl. S/N 07/676,690

Docket No. 89B010A/2

## **IN THE CLAIMS**

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (canceled)
9. (canceled)
10. (canceled)
12. (canceled)
13. (canceled)
14. (canceled)
15. (canceled)
16. (canceled)
17. (canceled)
18. (canceled)

Amendment Under 37 C.F.R. §1.111  
U.S. Patent Appl. S/N 07/676,690

Docket No. 89B010A/2

19. (canceled)
20. (canceled)
21. (canceled)
22. (canceled)
23. (canceled)
24. (canceled)
25. (canceled)
26. (canceled)
27. (canceled)
28. (canceled)
29. (canceled)
30. (canceled)
31. (canceled)
32. (canceled)
33. (canceled)

Amendment Under 37 C.F.R. §1.111  
U.S. Patent Appl. S/N 07/676,690

Docket No. 89B010A/2

34. (previously presented) A process for the polymerization of one or more olefins comprising conducting the polymerization in the presence of a catalyst system comprising:

(A) a Group IV B transition metal component of the formula:  
wherein "M" is Zr, Hf or Ti;

$(C_5H_{5-x}R_x)$  is a cyclopentadienyl ring which is substituted with from zero to five substituent groups R, "x" is 0, 1, 2, 3, 4 or 5 denoting the degree of substitution, and each R is, independently, a radical selected from a group consisting of  $C_1$ - $C_{20}$  hydrocarbyl radicals,  $C_1$ - $C_{20}$  substituted hydrocarbyl radicals wherein one or more hydrogen atoms is replaced by a halogen atom,  $C_1$ - $C_{20}$  hydrocarbyl-substituted metalloid radicals wherein the metalloid is selected from Group IV-A of the Periodic Table of Elements, and halogen radicals or  $(C_5H_{5-x}R_x)$  is a cyclopentadienyl ring in which two adjacent R-groups are joined forming a  $C_4$ - $C_{20}$  ring to give a saturated or unsaturated polycyclic

cyclopentadienyl ligand;

$(JR'_{z-1})$  is a heteroatom ligand in which "J" is an element with coordination number of three from Group V-A or an element with a coordination number of two from VI-A of the Periodic Table of Elements, each "R" is, independently a radical selected from a group consisting of  $C_1$ - $C_{20}$  hydrocarbyl radicals, substituted  $C_1$ - $C_{20}$  hydrocarbyl radicals wherein one or more hydrogen atoms is replaced by a halogen atom, and "z" is the coordination number of the element "J";

each "Q" is, independently, any univalent anionic ligand or two "Q"'s are a divalent anionic chelating ligand, provided that "Q" is different from  $(C_5H_{5-x}R_x)$ ;

"L" is a neutral Lewis base where "w" is a number greater than 0 and up to 3;

"M" has the same meaning as "M"; and

"Q" has the same meaning as "Q"; and

Page 5 of 11

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Amendment Under 37 C.F.R. §1.111  
U.S. Patent Appl. S/N 07/676,690

Docket No. 89B010A/2

(B) an alumoxane.

35. (canceled)

36. (canceled)

37. (Currently Amended) The ~~catalyst system~~ process of claim 34 wherein the heteroatom ligand group J element is nitrogen, phosphorous, oxygen or sulfur.

38. (Currently Amended) The ~~catalyst system~~ process of claim 34 wherein Q is a halogen or hydrocarbyl radical.

39. (Currently Amended) The ~~catalyst system~~ process of claim 34 wherein M is zirconium or hafnium.

40. (Currently Amended) The ~~catalyst system~~ process of claim 34 wherein the heteroatom ligand group J element is nitrogen.

41. (Currently Amended) The ~~catalyst system~~ process of claim 34 wherein the mole ratio of Al:M is from 10:1 to 20,000:1.

42. (Currently Amended) The ~~catalyst system~~ process of claim 34 wherein x is 0 or 1.